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MAY 14 1970

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FEDERAL - STATE - PRIVATE  
**COOPERATIVE SNOW SURVEYS**  
for  
**ALASKA**

U. S. DEPARTMENT of AGRICULTURE , SOIL CONSERVATION SERVICE  
and  
ALASKA SOIL CONSERVATION DISTRICT

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Army Corps of Engineers, Alaska Power Administration, U.S. Geological Survey, Alaska Highway Dept., Alaska Department of Fish and Game, University of Alaska, Greater Anchorage Area Borough and others.

AS OF  
**MAY 1, 1970**

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

## PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82601

## PUBLISHED BY OTHER AGENCIES.

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



# SNOW SURVEYS *for* ALASKA

*Issued by*

KENNETH E. GRANT

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SOIL CONSERVATION SERVICE  
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*Report Prepared by*

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UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
P.O. BOX F, PALMER, ALASKA

MAY 1970

Snow cover at the low elevations throughout most of Alaska has melted, producing very little runoff. Snow packs at the higher levels in the interior of the state increased slightly over last month but are still far below average.

Heavy snow fell in portions of the Talkeetna Mountains during the past month. The Eastern slope of the Alaska Range from Mt. McKinley to Beluga Lake also received heavy snowfall and this region now has considerably above normal snow cover. Above average snow packs are also the rule for the high elevations of the Chugach and Kenai Mountains.

Soils were generally very dry in all of interior Alaska at the beginning of winter. A major portion of the melting snow in this area will be absorbed directly into the ground. Streamflow from spring snowmelt will be light.





#### YUKON above RAMPART

Snow cover in the upper Yukon Basin has been much less than normal all winter. The dry soils and deficient snowpack indicate that summer streamflow will be light.

#### TANANA-CHENA DRAINAGE

Low elevation snow in this area has melted producing virtually no runoff. Snow Courses at the high elevations had considerably more snow on May 1 than on April 1 and streamflow prospects are slightly improved. Snow cover on the North and West slopes of the mountains in the upper portion of the Chena watershed has not started to melt. This snow should produce streamflow in late May and June.

#### MATANUSKA-SUSITNA-COPPER

Snow conditions vary greatly in this large drainage area. The Chugach Mountains draining into the Copper and Matanuska Rivers has a very heavy snowpack. The eastern portion of the Talkeetna Mountains has a light snow cover but the western section of these mountains received a substantial storm during the past month. The Copper basin and the Southern slope of the Alaska range has a very light snow cover and soils are dry. Snow pack in the lower Susitna drainage; including the Yentna, Skwentna, Kahiltna, and Chulitna Rivers is well above normal. Summer streamflow in this area should be above average.

#### KUSKOKWIM

Snow surveys were not made in the Kuskokwim drainage area this month but earlier measurements indicate an extremely light snow pack. All of the low elevation snow has gone, producing only light runoff.

#### KOYUKUK

The Koyukuk River drainage has had a lighter than normal snow cover throughout the winter. Soils are generally dry and runoff is expected to be light.

#### COASTAL DRAINAGE

High elevation snow cover in the Chugach Mountains near Anchorage increased during the past month resulting in an above average snow pack. Low elevation snow in the Ship Creek - Campbell Creek area melted producing very little streamflow. Snow cover in the Coastal drainage west of Cook Inlet is very heavy.

#### SNETTISHAM DRAINAGE

This area in the coast range of mountains near Juneau has a near average snowpack at the higher levels. Low elevation snow cover is below the normal for May 1.





### GLACIER STATIONS

Measurements made by the U. S. Geological Survey at snow stations on Wolverine Glacier in the Kenai Mountains indicate an extremely heavy snowpack in that area.

### STREAMFLOW FORECASTS

Increased snowpack at the high elevations in the Chena and Salcha Watersheds have caused slightly improved streamflow prospects. Forecast procedures are based on snow survey data and the assumption that average rainfall will occur during the spring months.

The Chena River at Fairbanks is forecast to flow 178,000 acre feet during the May-June period. This is an extremely light flow and only 38% of the average for the past 10 years.

The Salcha River near Salchaket is forecast to flow 225,000 acre feet during the May-June period. The forecast flow is only 36% of the average for the past 10 years.



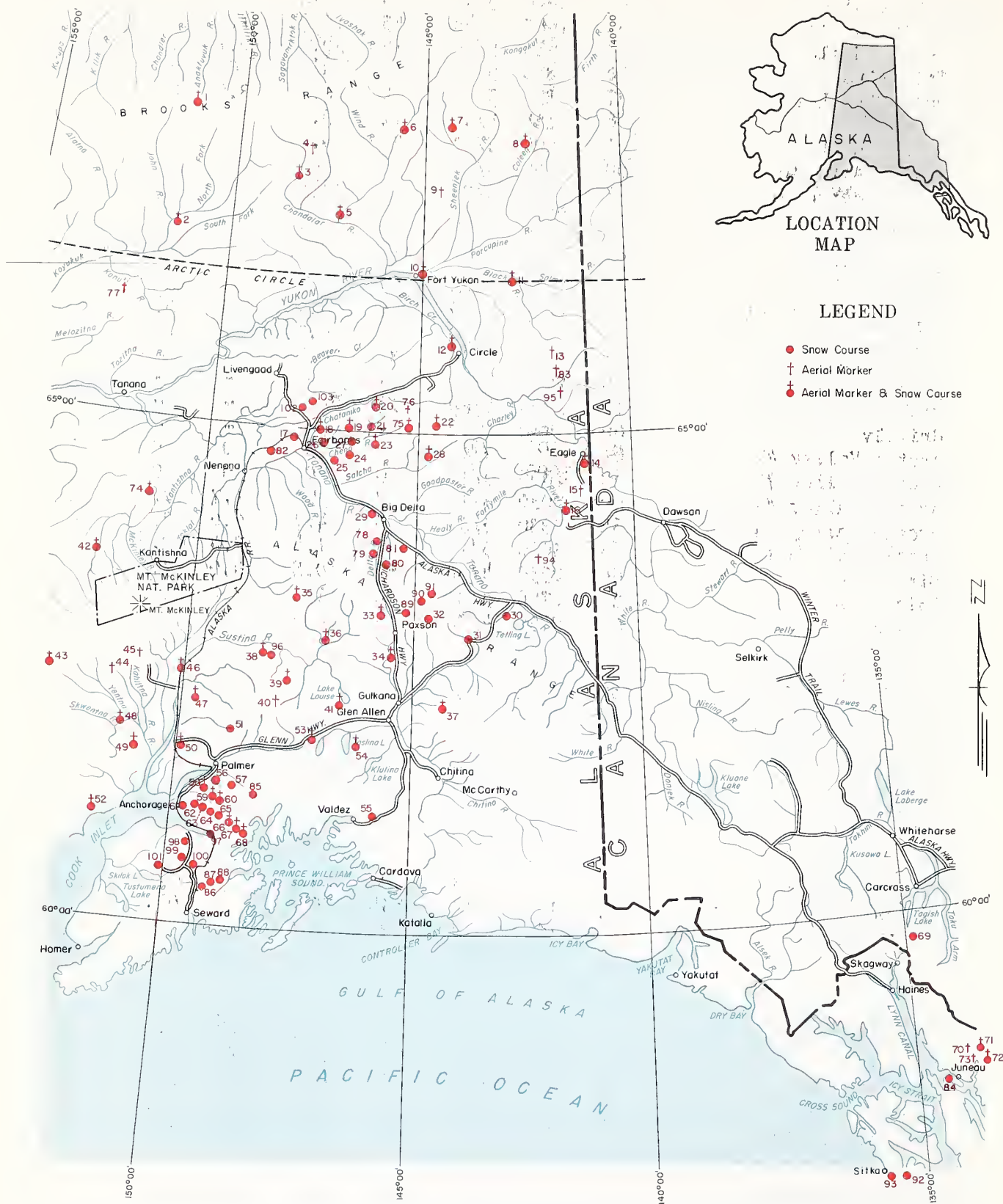
## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)		Years of Previous Record
						Last Year	Average †	
<u>YUKON Drainage:</u>								
Log Cabin	69	2880	5/4	37	11.7	9.8	11.5	12
<u>TANANA-CHENA</u>								
Yak Pasture	17	540	4/28	0	.0	.0	1.7	9
Cleary Summit	18	2230	4/15A	10	2.1	4.8	6.8	7
			5/1	15	3.6	4.6	7.4	9
Little Chena	19	2200	4/15A	8	1.5E	3.0	5.1	8
			5/1	8	1.9	T	5.4	8
Mt. Ryan	20	2950	4/15	12	2.2	3.8	7.9	8
			5/1	17	3.8	3.8	8.8	8
Chena Hot Springs	21	1250	4/15A	T	T	3.0	3.6	2
			5/1	0	.0	0.7	3.3	6
Big Windy	22	3850	4/15	T	T	3.9	4.2	7
			5/1	10	1.9	5.3	4.6	7
Munson Ridge	23	3100	4/15	15	3.3E	6.7	14.4	8
			5/1	20	4.6	7.7	15.3	8
French Creek	24	2010	4/28	7	2.3	0.8	7.4	8
Little Salcha	25	1500	4/28	4	1.2	0	4.8	8
Wolf Creek	26	3850	4/15A	4	1.0E	1.5	3.8	2
			5/1A	6	1.7E	1.5	4.6	2
Upper Chena	75	3000	4/15	14	2.5	5.5	7.0	2
			5/1	12	3.3	4.6	7.4	2
Colorado Creek	27	750	5/1	0	0	T	3.6	4
Caribou Mine	28	1115	4/15	T	T	2.4	3.6	4
			5/1	0	0	T	3.8	4
Big Delta	29	975	4/28	0	0	0	0	9
Tok Junction	30	1650	4/29	0	0	0	1.5	8
Mentasta Pass	31	2430	4/29	8	1.6	T	5.5	8
Fielding Lake	33	3000	4/28	32	8.5	1.8	11.5	9
Fort Greely	78	1420	4/28	0	0	T	1.8	3
Meadows Road	79	1570	4/28	0	0	0	1.3	3
Donnelly Dome	80	2200	4/28	7	1.6	0.6	6.8	3
Granite Creek	81	1235	4/29	0	0	0	0.8	2
Bonanza Creek	82	1150	5/1	0	0	3.6	4.6	2
Haystack Mtn.	102	1950	5/6	11	3.1	-	-	0
Caribou Creek	103	1440	5/6	0	0	-	-	0
Poker Creek	104		5/6	0	0	-	-	0
<u>COPPER RIVER</u>								
Mankomen Lake	32	3050	5/1	18	3.4	2.4	6.0	3
Haggard Creek	34	2540	4/29	10	2.2	0	4.4	4
Sanford River	37	2280	5/4A	0	0	0	1.8	3
St. Anne's Lake	54	1985	5/4A	4	1.0	T	3.1	4
Little Nelchina	40	4160	-	-		4.2	4.8	2
<u>MATANUSKA-SUSITNA</u>								
Monahan Flat	35	2710	5/4	23	5.6	3.2	6.9	5
Clearwater Lake	36	3100	5/4	10	2.2	T	3.3	5
Fog Lakes #1	38	2770	5.4A	T	T	0	3.3	5
A - Aerial Marker Reading				E -	Estimated			



## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)		Years of Previous Record
NAME	Number	Elevation				Last Year	Average †	
<u>MATANUSKA-SUSITNA</u>								
(Continued)								
Fog Lakes #2	96	2240	5/4	6	1.5	-	-	0
Oshetna Lake	39	2950	5/4A	6	1.4E	2.1	3.3	5
Lake Louise	41	2400	5/4	5	1.2	T	3.2	5
Chelatna Lake	44	1650	5/4A	45	12.2E	7.8	11.2	4
Peters Hills	45	2010	5/4A	75	20.2E	8.7	12.4	2
Talkeetna	46	350	5/4	T	T	0	6.6	3
Bald Mtn. Lake	47	2150	5/4A	25	6.2E	3.2	8.6	5
Skwentna	48	158	5/4	11	3.9	0	6.9	3
Alexander Lake	49	200	5/4A	16	5.6E	6.0	8.9	4
Willow Airstrip	50	150	5/4	0	0	0	2.1	5
Independence Mine	51	3300	4/28	55	17.2	11.4	-	1
Sheep Mountain	53	2700	4/30	9	2.4	0	3.0	12
<u>COASTAL Drainage</u>								
McArthur	52	120	5/4A	67	20.1E	11.2	15.6	4
Worthington Glacier	55	2400	4/29	82	34.7	10.6	20.3	12
Moraine	56	2100	4/30	31	9.7	-	7.9	11
Ptarmigan	57	3000	4/30	35	10.7	-	9.3	11
Marmot	58	2000	-	-	-	-	-	0
Goat	59	3200	4/30	95	34.2	-	-	1
Grizzly	60	5000	-	-	-	-	-	0
Arctic Valley #1	61	500	5/1	0	0	0	0	5
Arctic Valley #2	62	1000	5/1	0	0	0	0	5
Arctic Valley #3	63	2030	5/1	T	T	1.7	3.5	5
Arctic Valley #4	64	2330	5/1	18	4.7	0.6	3.6	5
Arctic Ski Bowl	65	3000	5/1	25	7.4	10.4	12.6	5
Bird Creek	66	2350	4/30	57	20.8	14.9	17.0	3
Ship Creek	67	1750	4/30	36	11.9	7.2	8.9	3
Indian Pass	68	2350	4/30	64	22.3	17.4	20.8	3
<u>KENAI Peninsula</u>								
Bertha Creek	98	850	5/6	12	3.8	-	-	0
Kenai Summit	99	1390	5/6	39	11.8	-	-	0
Moose Pass	100	700	5/6	0	0	-	-	0
Jean Lake	101	620	5/6	0	0	-	-	0
<u>SOUTHEAST ALASKA</u>								
Upper Long Lake	70	1000	5/3	94	40.0	40.3	42.1	5
Long Lake	71	1075	5/3	96	40.6	36.8	44.9	5
Speel River	72	275	5/3	28	13.2	20.4	28.4	5
Crater Lake	73	1750	5/3	154	70.0	77.0	67.7	5
Douglas Ski Bowl	84	1640	5/3	102	42.0	38.8	35.5	2
<u>GLACIER Stations</u>								
Wolverine Glacier A	86	2130	4/18	136	59.0	31.9	31.7	2
Wolverine Glacier B	87	3610	4/11	236	104.7	56.7	54.0	2
Wolverine Glacier C	88	4430	4/19	338	157.9	80.7	-	1
A - Aerial Marker reading				E - Estimated				





# INDEX OF ALASKA SNOW COURSES

MAP No.	COURSE NAME	COURSE No.	ELEV.	MAP No.	COURSE NAME	COURSE No.	ELEV.
1	Anaktuvuk Pass	51TT1A	2100	53	Sheep Mountain	45MM1	2700
2	Bettles Field	51RR1A	640	54	St. Anne's Lake	46MM1A	1985
3	Chandalar Lake	48SS1A	2040	55	Worthington Glacier	45MM2	2400
4	Squaw Lake	48SS2a	2150	56	Moraine	48MM1	2100
5	Venetie	46SS1A	610	57	Ptarmigan	48MM2	3000
6	Arctic Village	45TT1A	2300	58	Marmot	48MM8A	2000
7	Koness Lake	44SS1A	1790	59	Goat	48MM7A	3200
8	Coleen River	42SS1A	1100	60	Grizzly	48MM4A	5000
9	Vundik Lake	43SS1a	950	61	Arctic Valley #1	49MM1	500
10	Fort Yukon	44RR1AM	425	62	Arctic Valley #2	49MM2	1000
11	Black River	42RR1A	650	63	Arctic Valley #3	49MM3	2030
12	Circle City	44QQ3A	600	64	Arctic Valley #4	49MM4	2330
13	Bull Lake	42QQ1a	810	65	Arctic Ski Bowl	49MM5	3000
14	Eagle Village	41PP1A	900	66	Bird Creek	49MM6A	2350
15	Boundary	41PP3A	3300	67	Ship Creek	49MM7AM	1750
16	Chicken Airstrip	41PP2A	1650	68	Indian Pass	49MM8A	2350
17	Yak Pasture	47PP1	540	69	Log Cabin (B.C.)	35KK1	2880
18	Cleary Summit	47QQ1A	2230	70	Upper Long Lake	33JJ2a	1000
19	Little Chena	46QQ2AP	2200	71	Long Lake	33JJ1A	1075
20	Mt. Ryan	46QQ1AP	2950	72	Speel River	33JJ3A	275
21	Chena Hot Springs	46QQ3	1250	73	Crater Lake	33JJ4a	1750
22	Big Windy	44QQ2AP	3850	74	Wien Lake	55PP1A	1020
23	Munson Ridge	46PP1AP	3100	75	Upper Chena	44QQ3AP	3000
24	French Creek	46PP2MP	2010	76	Wolf Creek	44QQ4a	3850
25	Little Salcha	46PP3	1500	77	Lake Todatonten	52RR1a	985
26	Glenn Creek	47PP2	925	78	Ft. Greely	45005	1420
27	Colorado Creek	46PP4	750	79	Meadows Road	45002	1570
28	Caribou Mine	45PP2A	1115	80	Donnelly Dome	45003	2200
29	Big Delta	45PP1	975	81	Granite Creek	45004	1235
30	Tok Junction	43001	1650	82	Bonanza Creek	48PP1	1150
31	Mentasta Pass	43NN1	2430	83	Dempsey Creek	42QQ2a	950
32	Mankomen Lake	44NN1	3050	84	Douglas Ski Bowl	34111	1640
33	Fielding Lake	45001A	3000	85	Eagle Glacier	49MM9	4790
34	Haggard Creek	45NN1A	2540	86	Wolverine Glacier #1	48LL1	2130
35	Monahan Flat	47001A	2710	87	Wolverine Glacier #2	48LL2	3610
36	Clearwater Lake	46NN1A	3100	88	Wolverine Glacier #3	48LL3	4430
37	Sanford River	44NN2a	2280	89	Gulkana Glacier #1	45006	4590
38	Fog Lakes	48NN1A	2270	90	Gulkana Glacier #2	45007	5478
39	Oshetna Lake	47NN1A	2950	91	Gulkana Glacier #3	45008	6363
40	Little Nelchina	47NN2a	4160	92	Mt. Bassie	35111	1200
41	Lake Louise	46NN2A	2400	93	Blue Lake	35112	950
42	Lake Minchumina	52001A	730	94	Mt. Fairplay	42001a	3100
43	Farewell Lake	53NN1A	1090	95	Nation River	41QQ1a	3050
44	Chelatna Lake	51NN1a	1650	96	Fog Lakes #2	48NN2	2250
45	Peters Hills	50NN1a	2010	97	Mt. Alyeska	49LL1	1300
46	Talkeetna	50NN2	350	98	Bertha Creek	49LL2	850
47	Bald Mt. Lake	49NN1A	2150	99	Kenai Summit	49LL3	1390
48	Skwentna	51MM1A	158	100	Moose Pass	49LL4	700
49	Alexander Lake	50MM1A	200	101	Jean Lake	50LL1	620
50	Willow Airstrip	59MM2	150	102	Haystack Mtn.	47QQ2	1950
51	Independence Mine	49MM7	3300	103	Caribou Creek	47QQ3	1440
52	McArthur	51LL1A	120				

## Legend

45TT1 Snow Course Only  
 45TT1M Snow Course & Soil Moisture  
 45TT1A Snow Course & Aerial Marker  
 45TT1a Aerial Marker Only  
 45TT1P Snow Course & Precipitation Gage

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